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ON THE FUTURE DISTRIBUTION OF WHITE SETTLEMENT

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At the request of the Editor of the *Geographical Review* I send these brief comments on Professor Taylor's thoughtful and thought-provoking article, "The Distribution of Future White Settlement," in the July number. The main issue between Professor Taylor and me probably lies in our differing answers to his fundamental question, which is this: Assuming that accidental and artificial influences upon the distribution and density of the white population of the earth are destined to become in future less potent, and this I concede only for the purpose of raising the main issue, will physiographic influences, such as temperature, rainfall, altitude, and coal supply, become dominant and in combination fix the future distribution and density of the earth's white population? This question Professor Taylor answers in the affirmative. My answer would be, We cannot tell.

The view which seems to me defensible as an alternative to his, even in face of his evidence, is that, if the artificial influences become less potent, human and social influences, conscious and unconscious, are likely to compete with physiographic influences in filling the void.

Temperature escapes human control, but wheat does not. There is a hybrid variety of wheat, Marquis, which was first bred less than twenty years ago and which ripens earlier than competing varieties. In 1918 this variety yielded in Canada alone a crop of 129 million bushels and had pushed the area for the profitable growing of wheat farther into the Canadian Northwest. In my opinion there is doubt whether the whites will continue to be tied as closely as now to wheat for their main food and more doubt whether wheat will remain limited to its past and present range.

With scientific agriculture and especially its practical applications still in their infancy, I cannot foresee what developments will come from them nor how far man with the help of this potent agent can modify the production of food in various areas. If in the last half century or more the centers of agricultural production in Australia had shifted as far as they have in the United States, perhaps Professor Taylor would be less ready to assume a static agriculture through the next few centuries.

At another point I dissent even more confidently. He says "Health is controlled primarily by temperature and humidity." In my opinion it is not controlled by any one or two influences but is affected by individual, family, and social action more than it is by natural conditions. The motto of the New York State Department of Health: "Public health is purchasable; within limits a community can have the death rate it is willing to pay for" seems to me nearer the truth and more likely to be serviceable to mankind than the somewhat fatalistic dogma, "Health is controlled primarily by temperature and humidity."

Professor Taylor says: "The world as a whole has doubled its population during the last ninety years." The statement made with the presentation of no evidence and the mention of no authority illustrates the author's fondness for sweeping generalizations inadequately supported. My own recent study of the growth of the world's population led me to conclude that since the middle of the eighteenth century it has been rapidly increasing and is now perhaps two thirds larger than then. I doubt that during the last ninety years its increase has been greater than 50 per cent.

In the same connection Professor Taylor discussed briefly the growth of American population where the facts are well established. He wrote:

"The population of the United States has been doubling itself approximately each thirty years during the last century. It was 25 millions in 1850, 50 millions in 1880, and 100 millions in 1910. If this rate of increase continue, it will have grown to the 700 millions mentioned in Table VII in less than one hundred years."

The figures and increases are as follows.

POPULATION OF THE UNITED STATES IN MILLIONS

YEAR	SAME AREA	WITH TERRITORIAL ACCESSIONS	INCREASE IN 30 YEARS	
			AMOUNT	PERCENTAGE
1850	23.19	23.19		
1880	50.16	50.16	26.97	116
1910	91.97	101.15	41.81	83

To round 23.2 millions to 25 millions is a questionable procedure but less so than to raise a figure of less than 92 millions to 100 millions or to count the population of the Philippine Islands ($7\frac{2}{3}$ millions in 1903) as a part of the increase in the population of the United States between 1880 and 1910. The figures in the last column of the table show how wide of the truth is the statement that the population of the United States has been doubling every thirty years. Few facts about our population are better established or of greater importance than its slackening rate of growth since 1860.

May I put on record here my sceptical attitude towards any and all efforts to determine the population of the earth or any large part of it for more than a few years ahead, whether the method employed be one of subtle mathematical analysis, or merely the assumption that conditions and changes of the recent past will continue for some time? To my mind the largest population fact of the present day is the decreasing birth rate, due in the main to volitional control. It is because of this new phenomenon, I believe, that we stand at the threshold of a new era in the history of population. I doubt that we can gain much by striving to foresee how population will grow through coming generations or how it will be distributed in the remote future after this new agency has worked out its results and man has become thereby more and not less the master of his fate.